
Mathematical and Statistical Support Service at South Bank University

**Susan Starkings,
South Bank University**

starkisa@vax.sbu.ac.uk



There is a considerable amount of attention now being given to the Government's 'widening participation' policy. Broadly speaking Higher Education (HE) institutions are expected to reach out to disadvantaged people who come from backgrounds where they would not traditionally be expected to enter HE. Taking this on board and the points raised by in the 2001 Institute of Mathematics and Its Applications (IMA) report to its members highlighting concerns about the "development in, and adequate provision of, mathematics education" [1] South Bank University (SBU) set up a central mathematics and statistics support service. HE establishments trying to provide education and support on these two fronts face a daunting task. At SBU we have tried to provide and sustain support to address mathematical and statistical concerns.

During 1998 SBU made a strategic decision to fund central academic support for all students entering its courses. The support was designed with the university's commitment to 'widening provision' in mind and had the aim of enabling progression for local people. Southwark, Lewisham and Lambeth are working class boroughs which have some of the lowest progression rates to HE in the country. Few people have backgrounds with any experience of HE at all and many adults lack formal qualifications. The support provided was in addition to the regular lecturers and tutorials that students receive as part of their course at the university. Some of this central academic support had been provided for several years but in a rather ad hoc manner. For example mathematics and statistics support was carried out by the school of computing and mathematics but since the mathematics degree was coming to its end, there was concern that experienced teaching staff may be lost leaving a small pool of staff who would not have sufficient time and resources to provide this type of support. Hence mathematics and statistics support was considered essential to enable students under the 'widening participation' umbrella to be successful at SBU and central support was thus set up. The support was to be provided for all students at the university irrespective of course. At the same time English language, study skills, disability and dyslexic support provision was provided. The Learning and Development Centre (LDC) became the home of all this central support and the academic team work closely together sharing resources.

Setting up and running any support service demands a considerable amount of investigation and co-ordination by the organiser(s). The support described here was set up after a great deal of discussion and planning had been carried out by the organiser. A number of factors needed to be taken into account when designing the structure for this support service. For example, one of the important considerations is that a pool of well qualified and experienced staff are available, and were indeed essential for the smooth introduction and subsequent running of the service. At SBU we tend to use a range of staff who have expertise in helping students at the FE/HE transition level, for example staff who have taught Access or Foundation courses in FE colleges. A considerable number of students who come to use the service are in the first year of their study at university and have problems at this level. Hence the need for tutors experienced at this level is essential. In previous years, when students entered HE with a sufficient grasp of the mathematics required, these type of staff would not have been required and the ordinary HE lecturers would have been sufficient. If we are to fully embrace the 'widening participation' aspect and compensate for the lack of mathematical experience in our students then some form of support is necessary if these students are to succeed in HE.



According to Mustoe [3] "The state of mathematics education in the UK is deteriorating rapidly" and something needs to be done to help address this problem. Mustoe's comments/findings relate to the decline in the mathematical background for students entering engineering. This situation is not unique to engineering but to the lack of mathematical competency for a large percentage of students entering HE. It is clear that students will need help with their mathematics if they are to succeed in HE. At SBU we are trying to help overcome this problem but face an uphill struggle. An excellent reference point to read, before embarking on providing extra mathematical help is [2] and a must for anybody in HE who wishes to set up support of this type.

The Mathematical and Statistical Support Service, launched in March 1999, at SBU aims to provide students, researchers and lecturers with one off classes, short courses and one-to-one sessions in mathematics and statistics and to give ongoing support to these interested parties. The emphasis is on the students and their requirements and the provision of support to match these. The Mathematical and Statistical Support Service forms part of the LDC at SBU. Its subject reference point is the Mathematics Support Section of the LDC. The students, researchers, and lecturers have not appeared to mind the Statistical Support Service being part of the Mathematics Support Section, hence its introduction and implementation has got off to a good start. Teams of mathematical and statistical staff are available to give help and advice to all concerned. The problems associated with providing a service of this type are numerous. The issue of having experience staff on hand to be able to answer the poignant questions is essential. Where these staff come from or have gained their expertise is open to debate in the UK since many of the mathematics and statistics degree programmes are not being run at the universities and hence the pool of qualified staff is ever diminishing. Staff who can help the students, at this level, are even more difficult to find.

There could be a real problem in the future when trying to recruit appropriate staff.

Relevant and up to date handouts explaining techniques are useful for students to work through but generally do not provide enough in depth material and analysis to cover all the areas of the students needs. As well as the material already available in the public domain such as

<http://www.counton.co.uk>, and

<http://www.bbc.co.uk/education>

we at SBU have developed some paper based handouts that we use with the students and a CD ROM entitled "Refreshed in Maths" [4] which also compliments/supports the recommended text book of the same name [5]. The CD-ROM is free to all our students but the textbook is to be purchased by the student if required. In addition to the book and CD-ROM a set of ten video cassettes have been produced to give more information on the topics.

The question of ongoing support must be addressed and is also an essential requirement for the student. In addition the lecturers/tutors have to be fully conversant with teaching pedagogy as well as learning and assessment techniques. The salary of the person providing support needs to be met, having someone experienced and available at the time required by the student is not always possible. The Mathematical and Statistical Support Service at SBU is only provided at certain times and the users of the service have to book an available time slot to obtain help. Much as we at SBU would like to provide this support continuously this is not practical in economic terms. At SBU we do also provide as part of our service a 6-week summer mathematics programme for potential and existing students. Students can attend our course everyday for 6 weeks to bring their mathematical and statistical skills up to the level required to enter our university. For further information on this course a detailed case study of this will be published as part of the LTSN MathsTEAM project.

Relevant software is available for use but the machines that run this software are not housed in the LDC. Hence the student must print out any query they have and bring it to the LDC. Our computer services department will help with the problems associated with the computers but do not necessarily have the expertise in the software package being used. Some students, particularly if they are not fully computer literate, can find this a real stumbling block. Our staff in the LDC have on occasions gone to the computer lab with the student needing help. For any new software, ie not the general statistical or mathematical software that is generally used such as SPSS, Minitab, Maple or Mathcad our staff may not be

familiar with all the technical details and hence can waste a lot of time on something that is not of a mathematical or statistical nature. Hence we keep this provision to a minimum, as time is a precious resource.

Students evaluation results have been very positive and have helped students pass the units, which have a mathematical or statistical element. Examples of student feedback that has been useful in sustaining continued financial support and has helped SBU to improve and promote the service are:

- “the teacher took time to explain everything”
- “this helped me get through my course”
- “the tutors were very helpful”
- “learning new skills that had been forgotten in an easy and understanding way”
- “relating mathematics to other subjects”
- “more time should be given to be able to book help”

It is clear from these comments that the students value the service and in particular the personal contact with a member of staff with the required mathematical and statistical expertise. This is an expensive resource to fund but if we are to help our students succeed then it is an essential service.

The LDC keeps electronic registers of the students who use the service so that this can be used for

- (a) statistical justification for maintaining funding to run the service;
- (b) so that the LDC can see which sessions are to be repeated or retained for subsequent academic years because they are so popular or removed if not required and
- (c) from the one-to-one sessions we record the topic that help is requested ie if this topic is repeated many times then for the next academic year we put this on as a session.

Hence the support programme is dynamic rather than static in the provision offered. The electronic register contains details such as student i/d number, course number, session attended or query asked as well as time, day and date. A point to note here is that an administrator would be useful to put these details onto the computerised database or you may find valuable academic time could be lost on this task. Similarly an administrator to produce the statistical data required at the end of the academic year, so that the final report on the service can be written, is vital.

SBU is probably unique in that our students

tend to be much older, come from diverse ethnic and educational backgrounds and predominately live within commuting distance of the university. The service we provide is for students of this type, however, the comments made are certainly applicable to other universities trying to provide help for their students. While I have outlined the problems we have found here at SBU and that any organisation attempting to provide this type of service should be aware of, the service has received good reports from the people that have used the system. The portfolio of courses and service we offer under the mathematical and statistical support service is forever under review and we endeavour to make the service better. We at SBU will continue to offer this service and hope to extend its provision in subsequent academic years. Should you need any further information or can offer or require any help regarding our service at SBU then please feel free to contact me by email or refer to the following website:

<http://www.sbu.ac.uk/caxton>

References

- [1] IMA 2001, The Institute of Mathematics and its Applications Annual Report to Members 2001
- [2] Duncan Lawson, Margaret Halpin and Tony Croft (2001), Good Practice in the Provision of Mathematics Support Centres, Learning and Teaching in Mathematics, Statistics and Operation Research, 3/01, LTSN Maths Stats & OR Network
- [3] Leslie Mustoe (2002), Papering over the Cracks? Mathematics for engineering undergraduates, IMA Mathematics Today, Vol 38 No.3 p76, June 2002
- [4] R N Rowe, Refresher in Maths, South Bank University, 2002
- [5] R N Rowe, Refresher in Basic Maths, Continuum, London, 2000

